

CLAIMS

What is claimed is:

1. A method for sending a document to a second community member from a first community member, the document saved in a version native to the first community member, the method including:

determining if the native version is equivalent to a community version;

sending the native version document to the second community member if the native version is equivalent to said community version;

converting the native version document to said community version and to all versions closer to said community version than the native version if the native version is not equivalent to said community version; and

sending the native version document, community version document, and any other converted documents to the second community member if the native version is not equivalent to said community version.

2. The method of claim 1, wherein said sending the native version document, community version document, and any other converted documents to the second community member includes:

encapsulating said community version document in a message; and

saving said native version document and any other converted documents as attachments to said message.

3. The method of claim 2, wherein said message further contains:
  - a key;
  - one or more value pairs;
  - a context document; and
  - a catalog document.
4. The method of claim 2, wherein said message has one or more properties, each of said properties being either managed or user-provided.
5. The method of claim 3, wherein said catalog document aids in resolving a reference within said message.
6. The method of claim 2, wherein said saving includes storing said attachments in the message itself.
7. The method of claim 2, wherein said saving includes binding a universal resource identifier (URI) to an element in said document.
8. The method of claim 1, wherein said converting includes accessing a transformation registry to determine how to convert between versions.
9. A method for receiving a document from a first community member at a second community member, the method including:

receiving a message from said first community member;

determining if said message has only one document;

converting said document from a community version to a version native to said second community member if said message has only one document and said version native to said second community member is not equivalent to said community version;

determining which of said documents is closest to a version native to said second community member if said message has more than one document, said closest document having a version; and

transforming said closest document to said version native to said second community member if said message has more than one document and said version native to said second community member is not equivalent to said version of said closest document.

10. The method of claim 9, wherein said message contains a community version of the document as well as attachments for a version of the document native to said first community member and any other converted documents representing versions closer to said version native to said first community member than said community version.

11. The method of claim 9, wherein said message further contains:

a key;

one or more value pairs;

a context document; and

a catalog document.

12. The method of claim 9, wherein said message has one or more properties, each of said properties being either managed or user-provided.
13. The method of claim 11, wherein said catalog document aids in resolving a reference within said message.
14. The method of claim 9, wherein said converting and transforming each include accessing a transformation registry to determine how to convert between versions.
15. A method for communicating a document from a first community member to a second community member, the document saved in a version native to the first community member, the method including:
- determining if the version native to the first community member is equivalent to a community version;
  - sending the document to the second community member in a message if the version native to the first community member is equivalent to said community version;
  - converting the document to said community version and to all versions closer to said community version than the version native to the first community member if the version native to the first community member is not equivalent to said community version;
  - sending the document, community version document, and any other converted documents to the second community member by encapsulating said community version document in a message and saving said document and any other converted documents as attachments to said

message if the version native to the first community member is not equivalent to said community version ;

receiving said message from said first community member;

determining if said message has only one document;

converting said document from a community version to a version native to said second community member if said message has only one document and said version native to said second community member is not equivalent to said community version;

determining which of said documents is closest to a version native to said second community member if said message has more than one document, said closest document having a version; and

transforming said closest document to said version native to said second community member if said message has more than one document and said version native to said second community member is not equivalent to said version of said closest document.

16. The method of claim 15, wherein said message further contains:

a key;

one or more value pairs;

a context document; and

a catalog document.

17. The method of claim 15, wherein said message has one or more properties, each of said properties being either managed or user-provided.

18. The method of claim 16, wherein said catalog document aids in resolving a reference within said message.
19. The method of claim 15, wherein said saving includes storing said attachments in the message itself.
20. The method of claim 15, wherein said saving includes binding a universal resource identifier (URI) to an element in said document.
21. The method of claim 15, wherein said converting the document to said community version, said converting said document from a community version to a version native to said second community member, and said transforming each include accessing a transformation registry to determine how to convert between versions.
22. An apparatus for sending a document to a second community member from a first community member, the document saved in a version native to the first community member, the apparatus including:
- a native version/community version equivalence determiner;
  - a native version document sender coupled to said native version/community version equivalence determiner;
  - a native version document converter coupled to said native version/community version equivalence determiner; and

a native/community/other converted document sender coupled to said native version document converter.

23. The apparatus of claim 22, wherein said native/community/other converted document sender further includes:

a community version document message encapsulator; and

a native version/other converted document attachment saver coupled to said community version document message encapsulator.

24. The apparatus of claim 22, further including a transformation registry coupled to said a native version document converter.

25. An apparatus for receiving a document from a first community member at a second community member, the apparatus including:

a message receiver;

a one document message determiner coupled to said message receiver;

a community version to native version converter coupled to said message receiver and to said one document message determiner;

a closest document determiner coupled to said community version to native version converter; and

a closest document to native version transformer coupled to said closest document determiner and to said message receiver.

26. The apparatus of claim 25, further including a transformation registry coupled to said community version to native version converter and to said closest document to native version transformer.

27. A program storage device readable by a machine, tangibly embodying a program of instructions executable by the machine to perform a method for sending a document to a second community member from a first community member, the document saved in a version native to the first community member, the method including:

determining if the native version is equivalent to a community version;

sending the native version document to the second community member if the native version is equivalent to said community version;

converting the native version document to said community version and to all versions closer to said community version than the native version if the native version is not equivalent to said community version; and

sending the native version document, community version document, and any other converted documents to the second community member if the native version is not equivalent to said community version.

28. A program storage device readable by a machine, tangibly embodying a program of instructions executable by the machine to perform a method for receiving a document from a first community member at a second community member, the method including:

receiving a message from said first community member;

determining if said message has only one document;



converting said document from a community version to a version native to said second community member if said message has only one document and said version native to said second community member is not equivalent to said community version;

determining which of said documents is closest to a version native to said second community member if said message has more than one document, said closest document having a version; and

transforming said closest document to said version native to said second community member if said message has more than one document and said version native to said second community member is not equivalent to said version of said closest document.

29. A program storage device readable by a machine, tangibly embodying a program of instructions executable by the machine to perform a method for communicating a document from a first community member to a second community member, the document saved in a version native to the first community member, the method including:

determining if the version native to the first community member is equivalent to a community version;

sending the document to the second community member in a message if the version native to the first community member is equivalent to said community version;

converting the document to said community version and to all versions closer to said community version than the version native to the first community member if the version native to the first community member is not equivalent to said community version;

sending the document, community version document, and any other converted documents to the second community member by encapsulating said community version document in a

message and saving said document and any other converted documents as attachments to said message if the version native to the first community member is not equivalent to said community version ;

receiving said message from said first community member;

determining if said message has only one document;

converting said document from a community version to a version native to said second community member if said message has only one document and said version native to said second community member is not equivalent to said community version;

determining which of said documents is closest to a version native to said second community member if said message has more than one document, said closest document having a version; and

transforming said closest document to said version native to said second community member if said message has more than one document and said version native to said second community member is not equivalent to said version of said closest document.

30. An apparatus for sending a document to a second community member from a first community member, the document saved in a version native to the first community member, the apparatus including:

means for determining if the native version is equivalent to a community version;

means for sending the native version document to the second community member if the native version is equivalent to said community version;

means for converting the native version document to said community version and to all versions closer to said community version than the native version if the native version is not equivalent to said community version; and

means for sending the native version document, community version document, and any other converted documents to the second community member if the native version is not equivalent to said community version.

31. The apparatus of claim 30, wherein said means for sending the native version document, community version document, and any other converted documents to the second community member includes:

means for encapsulating said community version document in a message; and

means for saving said native version document and any other converted documents as attachments to said message.

32. The apparatus of claim 31, wherein said message further contains:

a key;

one or more value pairs;

a context document; and

a catalog document.

33. The apparatus of claim 31, wherein said message has one or more properties, each of said properties being either managed or user-provided.

34. The apparatus of claim 32, wherein said catalog document aids in resolving a reference within said message.

35. The apparatus of claim 31, wherein said means for saving includes means for storing said attachments in the message itself.

36. The apparatus of claim 31, wherein said means for saving includes means for binding a universal resource identifier (URI) to an element in said document.

37. The apparatus of claim 30, wherein said means for converting includes means for accessing a transformation registry to determine how to convert between versions.

38. An apparatus for receiving a document from a first community member at a second community member, the apparatus including:

means for receiving a message from said first community member;

means for determining if said message has only one document;

means for converting said document from a community version to a version native to said second community member if said message has only one document and said version native to said second community member is not equivalent to said community version;

means for determining which of said documents is closest to a version native to said second community member if said message has more than one document, said closest document having a version; and

means for transforming said closest document to said version native to said second community member if said message has more than one document and said version native to said second community member is not equivalent to said version of said closest document.

39. The apparatus of claim 38, wherein said message contains a community version of the document as well as attachments for a version of the document native to said first community member and any other converted documents representing versions closer to said version native to said first community member than said community version.

40. The apparatus of claim 38, wherein said message further contains:  
a key;  
one or more value pairs;  
a context document; and  
a catalog document.

41. The apparatus of claim 38, wherein said message has one or more properties, each of said properties being either managed or user-provided.

42. The apparatus of claim 40, wherein said catalog document aids in resolving a reference within said message.

43. The apparatus of claim 38, wherein said means for converting and means for transforming each include means for accessing a transformation registry to determine how to convert between versions.

44. An apparatus for communicating a document from a first community member to a second community member, the document saved in a version native to the first community member, the apparatus including:

means for determining if the version native to the first community member is equivalent to a community version;

means for sending the document to the second community member in a message if the version native to the first community member is equivalent to said community version;

means for converting the document to said community version and to all versions closer to said community version than the version native to the first community member if the version native to the first community member is not equivalent to said community version;

means for sending the document, community version document, and any other converted documents to the second community member by encapsulating said community version document in a message and saving said document and any other converted documents as attachments to said message if the version native to the first community member is not equivalent to said community version ;

means for receiving said message from said first community member;

means for determining if said message has only one document;

means for converting said document from a community version to a version native to said second community member if said message has only one document and said version native to said second community member is not equivalent to said community version;

means for determining which of said documents is closest to a version native to said second community member if said message has more than one document, said closest document having a version; and

means for transforming said closest document to said version native to said second community member if said message has more than one document and said version native to said second community member is not equivalent to said version of said closest document.

45. The apparatus of claim 44, wherein said message further contains:

a key;

one or more value pairs;

a context document; and

a catalog document.

46. The apparatus of claim 44, wherein said message has one or more properties, each of said properties being either managed or user-provided.

47. The apparatus of claim 45, wherein said catalog document aids in resolving a reference within said message.

48. The apparatus of claim 44, wherein said means for saving includes means for storing said attachments in the message itself.

49. The apparatus of claim 44, wherein said means for saving includes means for binding a universal resource identifier (URI) to an element in said document.

50. The apparatus of claim 44, wherein said means for converting the document to said community version, said means for converting said document from a community version to a version native to said second community member, and said means for transforming each include means for accessing a transformation registry to determine how to convert between versions.